

CLAIMS:

What is claimed is:

1. (Original) An apparatus for attaching a proximity probe offset to an axis defining a metal probe case and an extension cable extending therefrom comprising:

a metal interface cup securing the proximity probe therewith; and

a metal probe case configured with a first bore extending from one side toward an axis defining a length of said metal probe case, said bore configured to accept said metal interface cup while leaving a tip of the proximity probe exposed, a bottom surface defining said metal interface cup opposite said tip mates with a first surface defining a closed end of said first bore, said metal probe case is further configured with a second bore extending from a substantially opposite side of said one side, said second bore extending perpendicular from a surface defining said opposite side, wherein only a portion of said second bore intersects said first surface of said first bore creating a through hole into said first bore;

wherein when said metal interface cup is disposed in said first bore, said through hole is covered and includes a fusion at an interface between two exposed mating surfaces defining said cup and said second bore, thus securing said cup with said case.

2. (Original) The apparatus of claim 1, wherein said fusion includes a fusion process with or without addition of a binder material.

3. (Original) The apparatus of claim 1 wherein said second bore is smaller in diameter than said first bore.

4. (Original) The apparatus of claim 3 wherein said second bore is less than half a diameter of said first bore.

5. (Original) The apparatus of claim 1 wherein said second bore extends substantially perpendicular from said surface defining said opposite side.
6. (Original) The apparatus of claim 1 wherein said second bore includes two bores.
7. (Original) The apparatus of claim 1 wherein said fusion includes a laser weld.
8. (Original) The apparatus of claim 1 wherein said metal probe case is one of a cylindrical and a rectangular metal probe case.
9. (Original) The apparatus of claim 1 wherein a centerline of said second bore intersects a centerline defining the axis of a cylindrical metal probe case.
10. (Original) The apparatus of claim 1 wherein said metal probe case is configured with a bore to enclose the extension cable extending from the offset proximity probe.
11. (Original) The apparatus of claim 1 wherein said fusion is done after electronic components are installed in the proximity probe secured in said metal interface cup.
12. (Withdrawn) A method for attaching a proximity probe offset to an axis defining a metal probe case and an extension cable extending therefrom comprising:
 - securing the proximity probe with a metal interface cup;
 - configuring a metal probe case with a first bore extending from one side toward an axis defining a length of said metal probe case;
 - configuring said bore to accept said metal interface cup while leaving a tip of the proximity probe exposed;

mating a bottom surface defining said metal interface cup opposite said tip with a first surface defining a closed end of said first bore;

configuring said metal probe case with a second bore extending from a substantially opposite side of said one side, said second bore extending perpendicular from a surface defining said opposite side, wherein only a portion of said second bore intersects said first surface of said first bore creating a through hole into said first bore;

disposing said metal interface cup in said first bore covering said through hole; and

fusing an interface between two exposed mating surfaces defining said cup and said second bore, thus securing said cup with said case.

13. (Withdrawn) The method of claim 12, wherein said fusing includes a fusion process with or without addition of a binder material.

14. (Withdrawn) The method of claim 12 further comprising:

configuring said second bore smaller in diameter than said first bore.

15. (Withdrawn) The method of claim 14 wherein said second bore is less than half a diameter of said first bore.

16. (Withdrawn) The method of claim 12 wherein said second bore extends substantially perpendicular from said surface defining said opposite side.

17. (Withdrawn) The method of claim 12 wherein configuring said second bore includes configuring two bores.

18. (Withdrawn) The method of claim 12 wherein said fusing includes laser welding.

19. (Withdrawn) The method of claim 12 further comprising:

configuring said metal probe case as one of a cylindrical and a rectangular metal probe case.

20. (Withdrawn) The method of claim 12 wherein a centerline of said second bore intersects a centerline defining the axis of a cylindrical metal probe case.

21. (Withdrawn) The method of claim 12 further comprising:

configuring said metal probe case with a bore to enclose the extension cable extending from the offset proximity probe.

22. (Withdrawn) The method of claim 12 wherein said fusing is done after electronic components are installed in the proximity probe secured in said metal interface cup.